

### **ABSTRACT OF THE DISCLOSURE**

A system authenticates an original hardcopy document using a digital signature generation system and a digital signature verification system. Initially, the original hardcopy document is scanned to provide a bitmap image to the signature generation system. The bitmap image is highly compressed by the signature generation system using compression schemes such as MPEG (for gray images) or a low-fidelity symbol based compression scheme (for bi-level images). A signed hardcopy document is then printed that includes the bitmap image and an authentication token. The authentication token is encoded in the signed hardcopy document using either serpentine halftone patterns or data glyphs. The authenticity of the signed hardcopy document is verified by inputting a scanned bitmap image of the signed hardcopy document into the signature verification system. Once received, the signature verification system decodes, authenticates, and decompresses the bitmap image to define decompressed image data. The decompressed image data is then output to a display or printer and compared with the signed hardcopy document to determine whether it is authentic.